May 18, 2016

Mr. James Hitzeroth
Environmental Manager
Republic Services, Inc.
26W580 Schick Road
Hanover Park, Illinois 60103

Subject: **Zion Surface Emissions Monitoring Report - Second Quarter 2016**
Zion Landfill Site 1 (Phases A and B) and Old Site 2
Zion, Illinois
CEC Project 160-105

Dear Mr. Hitzeroth:

Civil & Environmental Consultants, Inc. (CEC) is pleased to present the information pertaining to the Second Quarter 2016 surface emissions monitoring (SEM) conducted at the Zion Site 1 Phase A and B and Old Site 2 Landfill on May 2, 2016. The monitoring event was conducted in accordance with (1) regulations set forth in the New Source Performance Standard, 40 Code of Federal Regulations (CFR) 60.755 (c) and (d); and (2) 40 CFR 60, Appendix A Method 21, promulgated by the United States Environmental Protection Agency.

A MicroFID I/S flame ionization detector (FID) was used to perform the emissions monitoring. The FID was calibrated prior to use, meeting Method 21 compliance requirements. Calibration logs were completed by the field technician performing the work, and are included in Attachment A.

The SEM was started by the CEC technician at 8:00 a.m. and was concluded at 3:00 p.m. The high temperature for the location was 55 degrees Fahrenheit. There were no readings greater than 500 parts per million above background measurements detected during this monitoring event.

If you have questions or need clarifications, please call Gregory Komperda at (630) 432-0999.

Very truly yours,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Gregory Komperda
Field Service Manager

Beau Harp, P.G.
Principal

Attachment A: Second Quarter 2016 SEM Summary

ATTACHMENT A

FIELD SERVICES
555 Butterfield Road
Lombard, IL 60148
Ph: (630) 963-6026
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DAILY FIELD REPORT

Date: Monday, May 02, 2016

Start Time: 8:00am **End Time:** 3:00pm

Site: Zion

Site Location: Zion IL **H&S/Tailgate Meeting:** GK

Project Number: 160-105 **Project Task:** 2

Prepared by: Gregory Komperda/Riche Hernandez/R **Project Manager:** Gregory Komperda

CEC Personnel: Riche Hernandez **Vehicle(s):** 54

CEC Subcontractor: **Personnel:**

Client: Republic **Client Personnel:** Jim Hitzeroth

Weather **Sky:** Clear **Temp:** 55 °F **Wind:** 10 SW MPH **Precipitation:** 0 inches

Work Summary: Pressure 30.06 in, Humidity 66%

CEC was onsite to conduct Surface Emmisions monitoring (SEM) Scans on 5/2/2016. A Microfid flame ionization detector (FID) was used to monitor fugitive CH4 emmisions at the Republic Zion Landfill. The FID was calibrated at 10am and then CEC proceeded to conduct the SEM scan until 3PM.

No exceedances above 500ppm CH4 were observed or recorded.

In addition to SEM scans Riche Hernandez conducted liquid level monitoring for 31 wells. Gregory Komperda was also onsite to repair multiple air regulators, conduct maintenance on the North and South Vault, and check results of the repair made to the North Vault Manhole.

Hour Summary: 8.0 **Total** 0.0 **Overtime** **Lunch:**

Equipment Used:

1) WL Indicator
2)
3)
4)
5)
6)
7)
8)

Pipe Used:

Approved by: Date:

CALIBRATION PRECISION TEST RECORD

LANDFILL NAME: Zion Landfill DATE: 2/19/2016

EXPIRATION DATE (3 MOS.): 8/2/2016

TIME: 8:00am

INSTRUMENT MAKE: PHOTO VAC MODEL: Micro FID S/N: C2FH 206-1

MEASUREMENT #1:

Meter Reading for Zero Air: 0.0 ppm (1)

Meter Reading for Calibration Gas: 495.0 ppm (2)

MEASUREMENT #2:

Meter Reading for Zero Air: 0.0 ppm (3)

Meter Reading for Calibration Gas: 518.0 ppm (4)

MEASUREMENT #3:

Meter Reading for Zero Air: 0.0 ppm (5)

Meter Reading for Calibration Gas: 507.0 ppm (6)

CALCULATE PRECISION:

$$\frac{[500 - (2)] + [500 - (4)] + [500 - (6)]}{3} \times \frac{1}{500} \times \frac{100}{1}$$

= 2.00 % (must be less than 10%)

PERFORMED BY: Raymond Olson

RESPONSE TIME TEST RECORD

LANDFILL NAME: Zion Landfill

DATE: 5/2/2016

TIME: 8:00am

INSTRUMENT MAKE: PHOTO VAC MODEL: Micro FID S/N: C2FH 206-1

MEASUREMENT #1:

Stabilized Reading Using Calibration Gas: 504.0 ppm

90% of the Stabilized Reading: 453.6 ppm

Time to Reach 90% of Stabilized reading
After switching from Zero Air to
Calibration Gas 5 seconds (1)

MEASUREMENT #2:

Stabilized Reading Using Calibration Gas: 507.0 ppm

90% of the Stabilized Reading: 456.3 ppm

Time to Reach 90% of Stabilized Reading
After switching from Zero Air to
Calibration Gas 5 seconds (2)

MEASUREMENT #3:

Stabilized Reading Using Calibration Gas: 511.0 ppm

90% of the Stabilized Reading: 459.9 ppm

Time to Reach 90% of Stabilized Reading
After switching from Zero Air to
Calibration Gas 6 seconds (3)

CALCULATE RESPONSE TIME:

$$\frac{(1) + (2) + (3)}{3}$$

= 5.3 SECONDS (MUST BE LESS THAN 30 SECONDS

PERFORMED BY: Raymond Olson

CALIBRATION PROCEDURE AND BACKGROUND DETERMINATION REPORT

LANDFILL NAME: Zion Landfill

INSTRUMENT MAKE: PHOTO VA(MODEL: Micro FID S/N: □2FH 206-1

Calibration Procedure

1. Allow instrument to internally zero itself while introducing zero air.

2. Introduce the calibration gas into the probe.
   Stable reading = 500.0 ppm

3. Adjust meter to read 500 ppm.

Background Determination Procedure

1. Upwind Reading (highest in 30 seconds): 0.0 ppm (1)

2. Downwind Reading (highest in 30 seconds): 0.0 ppm (2)

Calculate Background Value:

$$\frac{(1) + (2)}{2}$$

Background = 0.0 ppm

PERFORMED BY: Raymond Olson TIME: 10:35 AM

DATE: 5/2/2016

SCALE HOUSE

SITE 1
PHASE A

SITE 2

SITE 1
PHASE B
CELL NO. 1

SITE 1
PHASE B
CELL NO. 2

9TH STREET

MANHOLE

LEGEND

- EW-43 — EXTRACTION WELL
- REW-2 — REMOTE EXTRACTION WELLHEADS
- S-1 — NORTH TRENCH SUMP
- CS-5 — CONDENSATE SUMP
- R133 — GROUNDWATER MONITORING WELL
- GMP-7 — GAS MONITORING PROBE
- V-8 — VALVE BOX

- EXISTING GAS HEADER PIPING
- EXISTING LEACHATE FORCEMAIN PIPING
- EXISTING CONDENSATE DISCHARGE PIPING
- EXISTING AIR SUPPLY PIPING
- ELECTRICAL CONDUIT
- CENTERLINE OF GAS/LEACHATE EXTRACTION TRENCH
- REROUTED LEACHATE DISCHARGE PIPING
- SURFACE MONITORING ROUTE

NORTH

SCALE
0 150' 300' 600'

DRAWN BY: CJB/CPIV	DATE: 01/02/2008
DESIGNED BY: AAH	PROJ. No.: 0120-37
APPROVED BY: AAH	FILE No.: ZN000206.DWG

QUARTERLY SURFACE EMISSIONS SCAN
VEOLIA ZION LANDFILL
ZION, ILLINOIS

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